

REMARKS

The Applicants respectfully request reconsideration of this application in view of the above amendments and the following remarks.

35 U.S.C. §112 Rejection

Claims 8 and 17 are rejected under 35 U.S.C. 112, first paragraph.

Applicants submit that claims 8 and 17 have been amended to overcome the rejection, and respectfully request that the rejection be withdrawn.

35 U.S.C. §112 Rejection

Claims 1-31 are rejected under 35 U.S.C. 112, second paragraph.

Applicants submit that the independent claims have been amended to overcome the rejection, and respectfully request that the rejection be withdrawn.

35 U.S.C. §102(b) Rejection - Eisele

The Examiner has rejected claims 1, 3-6, 13, 22-27, 30 and 31 under 35 U.S.C. §102(b) as being anticipated by U.S. Patent No. 6,117,622 issued to Eisele (hereinafter referred to as "Eisele"). The Applicants respectfully submit that the present claims are allowable over Eisele.

Claim 1 recites "*A method of controlling a photoresist layer above a substrate comprising:*

forming, exposing, and developing the photoresist layer, forming at least one opening having a first dimension;

exposing the photoresist layer with the at least one opening to modify the photoresist layer characteristics after developing the photoresist layer; and

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heating the photoresist layer with the at least one opening, after exposing the photoresist layer with the at least one opening, to achieve a thermal reflow of the photoresist layer with the at least one opening to modify the dimension of the at least one opening in the photoresist layer.

Eisele does not teach or suggest these limitations. In particular, Eisele does not teach or suggest *“heating the photoresist layer with the at least one opening, after exposing the photoresist layer with the at least one opening, to achieve a thermal reflow of the photoresist layer with the at least one opening to modify the dimension of the at least one opening in the photoresist layer”*.

Eisele does discuss exposing the photoresists to elevated temperatures and says that the elevated temperatures may range from about 20C to about 230C. This is a wide range. Furthermore, Eisele discusses that different photoresists may be utilized and discusses that the temperature may vary, depending upon the photoresist being utilized. However, Eisele does not teach or suggest that the elevated temperature is high enough to achieve thermal reflow. In fact, Eisele does not even mention reflowing the photoresists. In contrast, Eisele discusses shrinking photoresists. Eisele does not teach or suggest that reflow would lead to shrinkage, or would otherwise be desirable.

Anticipation under 35 U.S.C. Section 102 requires every element of the claimed invention be identically shown in a single prior art reference. The Federal Circuit has indicated that the standard for measuring lack of novelty by anticipation is strict identity. *“For a prior art reference to anticipate in terms of 35 U.S.C. Section 102, every element of the claimed invention must be identically shown in a single reference.”* In *Re Bond*, 910 F.2d 831, 15 USPQ.2d 1566 (Fed. Cir. 1990).

For at least one or more of these reasons, claim 1 and its dependent claims are believed to be allowable over Eisele. Independent claims 7, 13, and 25 each recite reflow and accordingly these claims, and their respective dependent claims, are believed to be allowable for at least one or more similar reasons.

35 U.S.C. §102(e) Rejection - Mohondro

The Examiner has rejected claims 1-31 under 35 U.S.C. §102(b) as being anticipated by U.S. Patent No. 6,503,693 issued to Mohondro (hereinafter referred to as "Mohondro"). The Applicants respectfully submit that the present claims are allowable over Mohondro.

Claim 1 recites "*A method of controlling a photoresist layer above a substrate comprising:*

forming, exposing, and developing the photoresist layer, forming at least one opening having a first dimension;

exposing the photoresist layer with the at least one opening to modify the photoresist layer characteristics after developing the photoresist layer; and

heating the photoresist layer with the at least one opening, after exposing the photoresist layer with the at least one opening, to achieve a thermal reflow of the photoresist layer with the at least one opening to modify the dimension of the at least one opening in the photoresist layer.

Mohondro does not teach or suggest these limitations. In particular, Mohondro does not teach or suggest "*heating the photoresist layer with the at least one opening, after exposing the photoresist layer with the at least one opening, to achieve a thermal*

reflow of the photoresist layer with the at least one opening to modify the dimension of the at least one opening in the photoresist layer”.

Mohondro discusses a process for altering exposed and developed photoresist features. See e.g., the Abstract. However, MMM does not teach or suggest heating after exposing to achieve a thermal reflow of the photoresist layer. MMM also does not teach or suggest that achieving thermal reflow would be desirable. In fact, column 2, lines 34-43 seem to suggest that such flow would introduce problems and therefore be undesirable. Column 2, lines 53-60 seems to further suggest that photostabilization has the advantage or benefit of causing resistance to flow.

Anticipation under 35 U.S.C. Section 102 requires every element of the claimed invention be identically shown in a single prior art reference. The Federal Circuit has indicated that the standard for measuring lack of novelty by anticipation is strict identity. *“For a prior art reference to anticipate in terms of 35 U.S.C. Section 102, every element of the claimed invention must be identically shown in a single reference.”* In *Re Bond*, 910 F.2d 831, 15 USPQ.2d 1566 (Fed. Cir. 1990).

For at least one or more of these reasons, claim 1 and its dependent claims are believed to be allowable over Eisele. Independent claims 7, 13, and 25 each recite reflow and accordingly these claims, and their respective dependent claims, are believed to be allowable for at least one or more similar reasons.

35 U.S.C. §103(a) Rejection - Eisele

The Examiner has rejected claims 2, 14-21, 28 and 29 under 35 U.S.C. §103(a) as being unpatentable over Eisele.

Eisele does not teach or suggest the limitations of the independent claims. The discussion above is pertinent to this point. Applicants therefore elect not to address other aspects of this rejection at this time, since the independent claims have been showed to be allowable over Eisele.

Conclusion

In view of the foregoing, it is believed that all claims now pending patentably define the subject invention over the prior art of record and are in condition for allowance. Applicants respectfully request that the rejections be withdrawn and the claims be allowed at the earliest possible date.

Request For Telephone Interview

The Examiner is invited to call Brent E. Vecchia at (303) 740-1980 if there remains any issue with allowance of the case.

Request For An Extension Of Time

The Applicants respectfully petition for an extension of time to respond to the outstanding Office Action pursuant to 37 C.F.R. § 1.136(a) should one be necessary. Please charge our Deposit Account No. 02-2666 to cover the necessary fee under 37 C.F.R. § 1.17 for such an extension.

Charge Our Deposit Account

Please charge any shortage to our Deposit Account No. 02-2666.

Respectfully submitted,

BLAKELY, SOKOLOFF, TAYLOR & ZAFMAN LLP

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